



# **LEGACY WASTE DISPOSITION FOR THE OAK RIDGE RESERVATION**

**Deactivation & Decommissioning Focus Area**

**FY 1999 Mid-Year Review**

**May 25-27, 1999**

**Federal Energy Technology Center**

**Morgantown, WV**

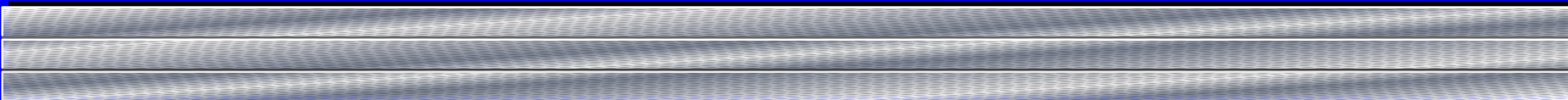
**Presented By:**

**Florida International University**

**Hemispheric Center for Environmental Technology**

# INTRODUCTION

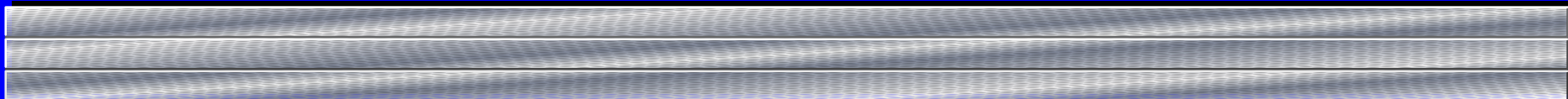
- Millions of pounds of legacy MLLW inventory are stored at 60 facilities across the ORR
- DOE has committed to eliminating this inventory by 2006
- A Broad Spectrum Contract vehicle is in place to provide TSDF options for ORR MLLW streams, however, several “*orphan*” streams do not have current disposition options identified
- To achieve DOE’s goal, the MLLW disposition effort needs to be streamlined
- The need exists for a systematic means of evaluating ORR MLLW, resolving disposition conflicts, and guiding users to available and potential alternative TSD options.



# PROJECT DESCRIPTION

## Goals and Objectives

- Assist DOE and Bechtel Jacobs to eliminate the ORR MLLW inventory by 2006
- Perform technical reviews of current approaches to MLLW disposition at ORR and recommend improvements to streamline. Pay particular attention to orphan waste streams
- Develop systematic approach to MLLW evaluation & TSD
- Assess and recommend feasible solutions for other problems and/or issues at ORR related to TSD processes (eg. Incineration) or to other specific waste streams (eg. Reactor Lead Shielding).



# PROJECT DESCRIPTION cont'd

## Outcome/Benefits

- Decision model to expedite selection of best TSD option for specified MLLW streams
- Accelerated TSD schedules and reduced overhead costs
- Optimized TSD processes
- Expedited reduction of legacy waste inventory
- High potential for application of results at other DOE sites.



# NEEDS ASSESSMENT

- End User Needs (DOE/Bechtel Jacobs)

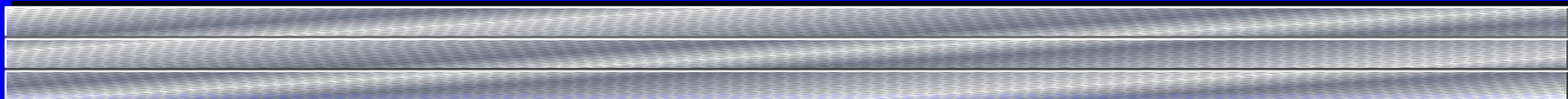
- To streamline MLLW disposition decision making
- To resolve disposition gaps associated with current Broad Spectrum Contract to maximize its utility
- To minimize treatment options and effort, and in turn reduce TSD costs.



# NEEDS ASSESSMENT (cont'd)

## ● STCG Needs

- Reduce waste volumes requiring complicated treatment (AL-07-01-06-MW; AL-07-02-01-MW; ORWM-23)
- Provide guidance in the classification, sorting, and segregation of MLLW to accelerate their disposition (AL-07-01-11-MW)
- Verify performance of PM-CEMs being tested at the TSCA Incinerator (ID-3.2.32; SR99-1004).



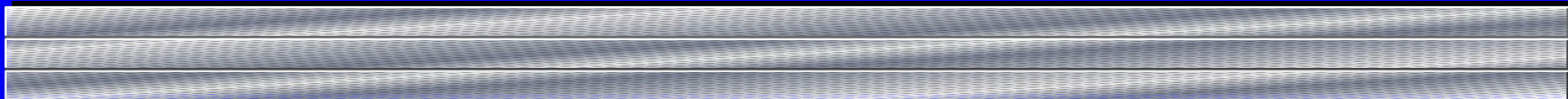
# Project Task Revision

- Original tasks defined by BJC based on 1998 needs.
- Tasks reviewed and redefined in March 1999 by BJC in consultation with FIU-HCET.
- The new tasks address waste populations/streams that are of immediate concern to BJC.
- Revised tasks are within the scope and goals of the project, to expedite elimination of ORR MLLW inventory to meet 2006 objective.



# TECHNICAL APPROACH

- Conduct technical reviews of regulatory and disposition issues associated with the ORR MLLW inventory. Update to current RCRA/LDR regulations & standards.
- Review/assign/update waste disposal/treatability codes and options for MLLW streams in inventory.
- Identify orphan streams and determine treatability options.
- Develop systematic approach and decision support model to evaluate MLLW streams and select disposition options.
- Apply decision model to other potentially problematic waste streams or TSD processes at ORR.
- Develop and implement technical approaches to resolve other TSD issues identified by FIU-HCET/Bechtel Jacobs.

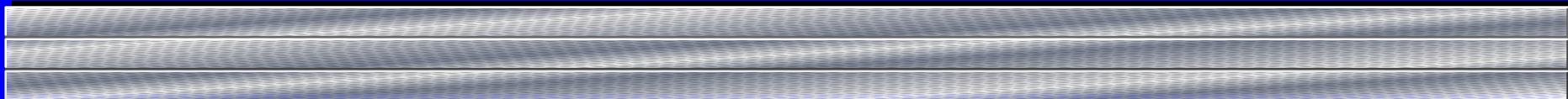




# PROJECT DELIVERABLES

## Main Objective

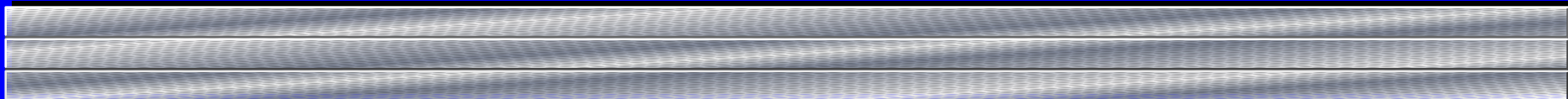
- All waste populations in ORR MLLW inventory assigned waste codes in compliance with current RCRA/LDR regulations and standards. **(BJC)**
- Waste populations categorized into groups that can be addressed under existing Broad Spectrum Treatment Contracts minimizing orphan populations requiring special TSD. **(BJC)**
- Streamlined procedures and Decision Model for systematically evaluating MLLW streams and selecting best TSD options. **(BJC, ORO, DOE)**



# PROJECT DELIVERABLES

## Other Tasks

- Comparative performance assessment of particulate matter continuous emission monitoring systems (PM-CEM) tested on the TSCA Incinerator (**TSCAI Group, EPA**)
- Report on TSD options for activated lead shielding and control plates (**ORR Waste Management**)
- Regulatory update of BDAT issues in the Broad Spectrum MLLW database (**BJC**)
- Final Report on Project



# TECHNICAL PROGRESS/STATUS

Milestones	Completion Criteria	Status
Regulatory update of the BDAT database	All waste codes in ORR MLLW Balance of Inventory (BOI) database updated to current RCRA/LDR regulations	Completed on schedule 4/15/99
Report on waste codes in sample populations of the ORR MLLW BOI database	Resolution of problematic waste code assignments and groupings	Completed on schedule on 4/30/99
Report on potential waste disposition conflicts and their resolution	Resolution of potential disposition conflicts; and identification of options	Projected to be completed on schedule 5/15/99
Assessment of effectiveness of revised approach to ORR MLLW evaluation and disposition	Documentation of reduced treatment effort required	Projected to be completed on schedule 6/15/99



# ISSUES

- Work on disposition of activated lead shielding and control plates on temporary hold, per BJC direction (4/9/99), pending DOE guidance.
- Delay in installation and testing schedule for TSCAI PM-CEMs shifts HCET support initiation to 5/15/99.



# PATH FORWARD

Milestones	Completion Criteria	Status
Report on TSD options for contaminated accelerator lead shielding.	At least 2 feasible options for disposing of the contaminated lead shielding.	Scheduled for completion 3/31/99. Put on-hold by BJC
Report on TSD options for contaminated control plates.	At least 2 feasible options for disposing of the contaminated cadmium plates.	Scheduled for completion 4/30/99. Put on-hold by BJC
Report on performance of PM-CEMs in meeting EPA monitoring guidelines.	A statistical correlation of the performances of the two tested CEMs.	Scheduled for completion 6/30/99. Scope of work being re-defined by BJC.
Final Report summarizing findings	Final report submitted to BJC	Due 10/31/99

- PM-CEM performance evaluation test plan developed by TSCAI Group continues into FY00.
- Current MWFA Needs express ongoing interest in MLLW disposition issues being investigated in this project



# PROJECT POINTS OF CONTACT AND INFORMATION SOURCES

- Project Manager/ Research Collaborator

- Marshall Allen
- (423) 220-8844
- mallen@eng.fiu.edu

- Group Leader

- Robert Tucker
- (305) 348-6181
- rtucker@eng.fiu.edu

- Program Manager

- Rob Rose
- (305) 348-6623
- rrose@eng.fiu.edu

- FIU-HCET Home Page

- <http://www.hcet.fiu.edu>

